AMENDMENTS TO THE CLAIMS

1-9. (Cancelled)

10. (Currently Amended) A method of analyzing gene polymorphism using

a first, second, and third gene detection field-effect device,

wherein each of said first and second gene detection field-effect device is provided with an insulation film including a nucleic acid probe immobilized on one of the surfaces thereof, a semiconductor substrate being installed so as to abut against the other surface of the insulation film, and a reference electrode, and

wherein said third gene detection field-effect device is provided with an insulation film free of a nucleic acid probe immobilized on one of the surfaces thereof, a semiconductor being installed so as to abut against the other surface of the insulation film, and a reference electrode; the method comprising the steps of:

(a) bringing a wild-type nucleic acid probe immobilized to ~~an~~ the insulation film of the first gene detection field-effect device into contact with sample solution containing at least ~~a~~ one target gene to hybridize the nucleic acid probe and the target gene on the insulation film,

bringing a mutant-type nucleic acid probe immobilized to the insulation film of the second gene detection field-effect device into contact with sample solution containing the at least one target gene to hybridize the nucleic acid probe and the target gene on the insulation film, and

bringing the insulation film free of nucleic acid probe immobilized thereon of the third gene detection field-effect device into contact with sample solution containing the at least one target gene to hybridize the nucleic acid probe and the target gene on the insulation film;

(b) introducing cleaning liquid on the respective insulation films of the first, second, and third gene detection field-effect devices to remove the target gene which is not reacted;

(c) introducing deoxyadenosine triphosphoric acid (dATP), deoxyguanosine triphosphate (dGTP), deoxycytidine triphosphate (dCTP), and deoxythymidine triphosphate (dTTP) as ground substances onto the respective insulation films of the first, second, and third gene detection field-effect devices along with Taq DNA polymerase as an enzyme for elongation to cause elongation;

(d) introducing cleaning liquid on the respective insulation films of the first, second, and third gene detection field-effect devices to remove the enzyme and the ground substances which are not reacted; and

(e) introducing buffer liquid on the respective insulation films of the first, second, and third gene detection field-effect devices, and measuring a differential output value V1 between ~~a~~ the first gene detection field-effect device ~~in which a wild-type nucleic acid probe is immobilized~~ and ~~a~~ the third gene detection field-effect device ~~in which the nucleic acid probe is not immobilized on the insulation film~~; measuring a differential output value V2 between ~~a~~ the second gene detection field-effect device ~~in which a mutant-type nucleic acid probe is immobilized~~ and the third gene detection field-effect device, and classifying into three patterns; a pattern in which V1 is larger than V2 (V1>V2), a pattern in which V1 and V2 is almost the same (V1≈V2), and a pattern in which V1 is smaller than V2 (V1<V2) and displaying the same; and measuring an output value of the gene detection field-effect device.

11. (Currently amended) The method of analyzing gene polymorphism according to Claim 10, wherein the nucleic acid probes are immobilized to the respective insulation films of the first and second ~~at least two of the~~ gene detection field-effect devices ~~are provided and at least two types of nucleic acid probes including a~~, wherein the wild-type ~~(normal-type)~~ nucleic acid probe ~~having~~of the first gene detection field-effect device comprise a base sequence which is complementary with a wild-type ~~(normal type)~~ base sequence of the target gene, and the mutant-type nucleic acid probe of the second gene detection field-effect device ~~a mutant-type nucleic acid probe having~~ comprise a base sequence which ~~is complementary with the wild-type base sequence of the target gene are immobilized to the respective insulation films of the gene detection field-effect devices~~ is mutated at a non-immobilized end of the wild-type nucleic acid probe.

12. (Cancelled)

13. (Previously presented) The method of analyzing gene polymorphism according to Claim 10, wherein at least one type of the nucleic acid probe is selected from the group consisting of oligonucleotide, a complementary DNA (cDNA) and peptide nucleic acid (PNA).

14. (Currently amended) The method of analyzing gene polymorphism according to Claim 10, wherein the nucleic acid probe of the first and second gene detection field-effect devices are ~~is~~ immobilized via a metal electrode.

15. (Previously presented) The method of analyzing gene polymorphism according to Claim 14, wherein at least one type of the metal electrode is selected from the group consisting of white gold, gold, silver, palladium, titan, and chrome.

16. (Previously presented) The method of analyzing gene polymorphism according to Claim 10, wherein a heater and a temperature sensor are further integrated.

17. (Currently Amended) The method of analyzing gene polymorphism according to Claim 10, wherein the insulation films of the first, second, and third gene detection field-effect devices are ~~is~~ formed of silicon nitride.

18. (Withdrawn) A gene polymorphism measuring system having at least a flow cell, a flow channel and a signal processing circuit, comprising:

(a) the flow cell including therein a gene detection field-effect device provided with an insulation film including a nucleic acid probe immobilized on one of the surfaces thereof, a semiconductor substrate being installed so as to abut against the other surface of the insulation film, and a reference electrode;

(b) the flow channel for introducing a sample solution to the gene detection field-effect device being connected to the flow cell; and

(c) the flow cell being connected to the signal processing circuit for processing a signal detected by the gene detection field-effect device.

19. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein at least two of the gene detection field-effect devices are provided and at least two types of nucleic acid probes including a wild-type (normal-type) nucleic acid probe having a base sequence which is complementary with a base sequence of a target gene and a mutant-type

nucleic acid probe having a base sequence which is complementary with the mutant-type base sequence of the target gene are immobilized to the respective insulation films of the gene detection field-effect devices.

20. (Withdrawn) The gene polymorphism measuring system according to Claim 19, wherein a base at a non-immobilized end, which is an end of the nucleic acid probe not immobilized to the insulation film of the mutant-type nucleic acid probe is different from a base at a non-immobilized end of a wild-type nucleic acid probe.

21. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein at least one type of the nucleic acid probe is selected from the group consisting of oligonucleotide, a complementary DNA (cDNA) and peptide nucleic acid (PNA).

22. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein the nucleic acid probe is immobilized via a metal electrode.

23. (Withdrawn) The gene polymorphism measuring system according to Claim 22, wherein at least one type of the metal electrode is selected from the group consisting of white gold, gold, silver, palladium, titan, and chrome.

24. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein a heater and a temperature sensor are further integrated.

25. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein the insulation film is formed of silicon nitride.

26. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein Taq DNA polymerase as an enzyme for elongation and deoxyadenosine triphosphoric acid (dATP), deoxyguanosine triphosphate (dGTP), deoxycytidine triphosphate (dCTP), and deoxythymidine triphosphate (dTTP) as ground substances are introduced on the insulation film for effecting elongation.

27. (Withdrawn) The gene polymorphism measuring system according to Claim 18, wherein a differential output value V1 between a first gene detection field-effect device in which a wild-type nucleic acid probe is immobilized and a third gene detection field-effect device in which a nucleic acid probe is not immobilized on the insulation film is measured; a differential output value V2 between a second gene detection field-effect device in which a mutant-type nucleic acid probe is immobilized and a third gene detection field-effect device is measured, and classification into three patterns; a pattern in which V1 is larger than V2 (V1>V2), a pattern in which V1 and V2 is almost the same (V1≈V2), and a pattern in which V1 is smaller than V2 (V1<V2) is performed and displayed; and an output value of the gene detection field-effect device is measured.